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Optically active hydroxyethyl azetidinone derivs. prepn. - from optically inactive acyloxyethyl azetidinone derivs. using microorganisms or enzymes

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Abstract (Basic): JP 61280295 A

Beta-lactam cpds. are produced by hydrolysing cpd. (dl substance) of formula (I) selectively by means of microorganisms or enzyme to derive optically active cpd. of formula (I) where R1 is H. (R1 is acyl; R2 is (substd.) alkyl, alkenyl, alkinyl, aryl, alkylthio, alkylsulphonyl, arylthio or arylsulphonyl or acyloxy; R3 is H or protective gp. for N atom).

Optically active 3-(1-hydroxyethyl)-2-azetidinone deriv. can be obtd. from optically inactive 3-(1-acyloxyethyl)-2-azetidinone derivs. (dl substance) by means of microorganisms or enzyme. The prods. are important intermediates for prepn. of carbapennem and pennem deriv. having antibacterial activity.

As microorganism may be various bacteria, yeast and fungi. Bacteria yeast and fungi. Bacteria include Arthrobacter simplex SANK 73560 (IAM 1660), Bacillus subtillis SANK 76759 (IAM 1069), Chrombacterium violaceum SANK 72783 (ATCC 31532), Flavobacterium capsulatum SANK 70979 (IFO 12533), and Flavobacterium meningosepticum SANK 70779 (IFO 12535). Yeast includes Aureobacidium pullurans SANK 10877 (ATCC 15232), Candida albicans SANK 50169 (IFO 0683), Pichia farinosa SANK 58062 (LAM 4303), Pichia terricola SANK 51684 (FERM 8001), Rhodotorula minuta SANK 50871 (IFO 0932), and Saccharomyces cerevisiae SANK 50161 (IAM 4512). fungi includes Aspergillus niger SANK 13658 (ATCC 9142) Gliocladium roseum SANK 10560 (FERM 8259), and Humicola asteroidea SANK 14981 (FERM 8260).

Enzyme may be microorganism origin or animal or plant cell origins,